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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,672	01/28/2004	Cyril Chevillard	API-1043US-COS-955	3031

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EXAMINER
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ART UNIT	PAPER NUMBER
1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/766,672	CHEVILLARD ET AL.	
	Examiner	Art Unit	
	Jeff Wollschlager	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *8-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 26-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Newly submitted claim 25 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 25 is a product claim. The examiner notes that as it is currently presented it is not even necessarily a product by process claim and merely requires the styrenic blend employed in claim 1 be the material from which the product is made. The product of claim 25 could be made by another process, such as injection molding.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 25 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Amendment

Applicant's amendment to the claims filed November 14, 2007 has been entered. Claims 1-4, 6 and 7 are currently amended. Claims 25-30 are new. Claims 8-25 are withdrawn from further consideration.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims recite that the melt blend is made of "polymers consisting of styrenic polymers". There does not appear to be support for this limitation in the instant disclosure. There does not appear to be support in the instant disclosure to limit the polymer blend to styrenic polymers or to exclude resins other than styrenic resins from the method (US 2005/0161858, paragraph [0036]).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 1 and 3-5, the recitation of "lower" and "higher" does not clearly require that the terms are relative to each other. For example, the claim does not make it clear that the MFI of the HIPS is lower than the MFI of the PS and could reasonably be interpreted to be relative to the MFI of their conventional family MFI's (e.g. a HIPS with a MFI low relative to other conventional HIPS products).

Regarding claims 2, 6 and 7, it remains unclear to the examiner under what test method the MFI of the HIPS and homopolymer PS is determined. The examiner notes that the unit of measure "g/10 min" is a conventional unit of measure reported for various test methods. These test methods employ different temperatures and different loads. The results can vary widely. While applicant has pointed to a footnote in one of Sosa's table, which was incorporated by reference into the instant disclosure, this does not provide clarity regarding the test method employed to determine the melt flow index of the claimed polymers. In particular, the MFI range of 20 g/min - 40 g/min is largely outside the range of many commercial homopolymer

polystyrene resins and the method determined to arrive at these values is critical for an accurate understanding of the instant invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4 and 26-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Cernohous et al. (US 6,379,791) as evidenced by Styron™ 484 and Dow Styron™ 615 Data Sheets.

Regarding claim 1, Cernohous et al. teach a method of producing a composite pressure-sensitive adhesive (Abstract). In the method, Cernohous et al. form a blend of Styron™ 484 HIPS and Styron™ 615 polystyrene and a compatibilizer and feed the blend to a single screw extruder and extrude the melted blend as a part of the overall pressure sensitive adhesive (col. 21, line 57-col. 22, line 55). As evidenced by the cited data sheets, HIPS 484 has a nominal melt flow rate of 2.8 g/10 min and PS 615 has a nominal melt flow rate of 14 g/10 min. Both of the melt flow rates are reported from an ASTM method performed at a temperature of 200 °C and under a load of 5 kg.

As to claim 3, Cernohous et al. exemplify a ratio of one part HIPS to one part PS (col. 22, line 28-31).

As to claims 4 and 26-30, the examiner recognizes the claimed effect is not positively stated by the reference. However, the same claimed materials are processed in the same

claimed method. As such, the same claimed effects and physical properties are necessarily realized and would show the same measured results.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cernohous et al. (US 6,379,791) as evidenced by Styron™ 484 and Dow Styron™ 615 Data Sheets.

As to claim 2, Cernouhous et al. teach the method of claim 1 as set forth above. Further, the cited data sheets provide evidence of the nominal melt flow rates of the materials employed by Cernohous under one set of test conditions. The nominal melt flow rate of the HIPS is clearly within the claimed numerical range while the nominal value of the polystyrene melt flow rate is somewhat below the claimed numerical range.

However, in view of the 35 USC 112, second paragraph rejection the examiner is unable to adequately compare the melt flow index values. The examiner notes that there are numerous melt flow testing conditions that employ higher temperatures and heavier loads than those employed to provide the nominal melt flow value of the Dow 615 resin which would yield a melt flow rate value higher than the nominal value cited on the data sheet. As such, the claim is rendered obvious over Cernohous et al. in view of the currently understood scope of the claim.

Regarding claim 6, Cernohous et al. teach a method of producing a composite pressure-sensitive adhesive (Abstract). In the method, Cernohous et al. form a blend of Styron™ 484 HIPS and Styron™ 615 polystyrene and a compatibilizer and feed the blend to a single screw extruder and extrude the melted blend (col. 21, line 57-col. 22, line 55). As evidenced by the data sheets, HIPS 484 has a nominal melt flow rate of 2.8 g/10 min and PS 615 has a nominal melt flow rate of 14 g/10 min. Both of the melt flow rates are reported from an ASTM method performed at a temperature of 200 °C and under a load of 5 kg.

Cernohous et al. exemplify a ratio of one part HIPS to one part PS (col. 22, line 28-31). The cited data sheets provide evidence of the nominal melt flow rates of the materials employed by Cernohous under one set of test conditions. The nominal melt flow rate of the HIPS is clearly within the claimed numerical range while the nominal value of the polystyrene melt flow rate is somewhat below the claimed numerical range.

However, in view of the 35 USC 112, second paragraph rejection the examiner is unable to adequately compare the melt flow index values. The examiner notes that there are numerous melt flow testing conditions that employ higher temperatures and heavier loads than those employed to provide the nominal melt flow value of the Dow 615 resin which would yield a melt flow rate value higher than the nominal value cited on the data sheet. As such, the claim is rendered obvious over Cernohous et al. in view of the currently understood scope of the claim.

As to claim 7, the examiner recognizes the claimed effect is not positively stated by the reference. However, the same claimed materials are processed in the same claimed method. As such, the same claimed effects and physical properties are necessarily realized.

Claims 1-4, 6, 7 and 26-30 are rejected under 35 U.S.C. 103(a) as being obvious over Holden et al. (US 4,188,432).

Regarding claims 1 and 3, Holden et al. teach a method of producing shaped articles by extrusion (col. 9, lines 58-65) consisting predominantly of polystyrene (Abstract; col. 5, lines 31-35), such as a blend of high impact polystyrene (HIPS) and styrene homopolymer (col. 5, lines 36-40) at a weight percentage of at least about 45% HIPS and no more than about 55% general purpose styrene homopolymer (col. 6, lines 47-50).

As to the terms "relatively low" and "relatively high" the examiner notes that the melt flow rate values of polystyrene and HIPS disclosed by Holden et al. overlap (table bridging col. 6 – col. 7). Accordingly, the overlapping ranges of the HIPS and polystyrene melt flow rates disclosed by Holden et al. render the scope of the claim obvious.

As to claim 2, Holden et al. provide melt flow rate values for HIPS and polystyrene under ASTM-1238, condition G at 200 °C. The melt flow index of the HIPS meets the claimed numerical value, but the melt flow index of the polystyrene does meet the claimed numerical values. However, in view of the 35 USC 112, second paragraph rejection the examiner is unable to adequately compare the melt flow index values. The examiner notes that there are numerous melt flow testing conditions that employ higher temperatures and heavier loads than those employed to provide the disclosed melt flow value

As to claims 4 and 26-30, the examiner recognizes the claimed effect is not positively stated by the reference. However, the same claimed materials are processed in the same

claimed method. As such, the same claimed effects and physical properties are necessarily realized.

Regarding claim 6, Holden et al. teach a method of producing shaped articles by extrusion (col. 9, lines 58-65) consisting predominantly of polystyrene (Abstract; col. 5, lines 31-35), such as a blend of high impact polystyrene (HIPS) and styrene homopolymer (col. 5, lines 36-40) at a weight percentage of at least about 45% HIPS and no more than about 55% general purpose styrene homopolymer (col. 6, lines 47-50).

Holden et al. provide melt flow rate values for HIPS and polystyrene under ASTM-1238, condition G at 200 °C. The melt flow index of the HIPS meets the claimed numerical value, but the melt flow index of the polystyrene does meet the claimed numerical values. However, in view of the 35 USC 112, second paragraph rejection the examiner is unable to adequately compare the melt flow index values. The examiner notes that there are numerous melt flow testing conditions that employ higher temperatures and heavier loads than those employed to provide the disclosed melt flow value

As to claim 7, the examiner recognizes the claimed effect is not positively stated by the reference. However, the same claimed materials are processed in the same claimed method. As such, the same claimed effects and physical properties are necessarily realized.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holden et al. (US 4,188,432), as applied to claims 1-4, 6 and 7 above, in view of Agarwal (US 5,541,285) and Kaulbach et al. (US 6,713,141).

As to claim 5, Holden et al. teach the method of claim 1 as set forth above. Holden et al. do not disclose the extruded shear rate. However, Kaulbach et al. discloses the well-known fact in the extrusion arts that extrusion speed/shear rate and degradation of the polymer are directly

proportional properties. As the extrusion speed/shear rate increases, the degradation of the polymer increases (col. 1, lines 50-67). Accordingly, one having ordinary skill would have readily optimized the extrusion speed/shear rate while practicing the method disclosed by Holden et al. to increase productivity and to minimize costs while producing a product with an acceptable degree of polymer degradation. Further the examiner notes that, in general, extruder speeds corresponding to shear rates up to about 10,000/s are known in the art as is disclosed by Agarwal (col. 3, lines 45-47).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method disclosed by Holden et al. in view of the teaching of Agarwal and Kaulbach in order to optimize production rates while ensuring an acceptable quality material is produced, as is routinely practiced in the art.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cernohous et al. (US 6,379,791) as evidenced by Styron™ 484 and Dow Styron™ 615 Data Sheets, as applied to claims 1, 3 and 4 above, in view of Agarwal (US 5,541,285) and Kaulbach et al. (US 6,713,141).

As to claim 5, Cernohous et al. teach the method of claim 1 as set forth above. Cernohous et al. do not disclose the extruded shear rate. However, Kaulbach et al. discloses the well-known fact in the extrusion arts that extrusion speed/shear rate and degradation of the polymer are directly proportional properties. As the extrusion speed/shear rate increases, the degradation of the polymer increases (col. 1, lines 50-67). Accordingly, one having ordinary skill would have readily optimized the extrusion speed/shear rate while practicing the method disclosed by Cernohous et al. to increase productivity and to minimize costs while producing a product with an acceptable degree of polymer degradation. Further the examiner notes that, in

general, extruder speeds corresponding to shear rates up to about 10,000/s are known in the art as is disclosed by Agarwal (col. 3, lines 45-47).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method disclosed by Cernohous et al. in view of the teaching of Agarwal and Kaulbach in order to optimize production rates while ensuring an acceptable quality material is produced, as is routinely practiced in the art.

Claims 1-4, 6, 7 and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al. (US 2003/0124334).

Regarding claims 1-4, 6, 7 and 26-30, Naito et al. teach a method of producing an extruded foam plate wherein a styrene homopolymer and a high-impact polystyrene maybe be used together in combination (paragraph [0025]). The melt flow rate of the extruded material is between 0.5 – 30 g/min as measured by the cited JIS test method (paragraph [0026]). Additionally, Naito et al. teach the melt flow rate of the material is selected to achieve desired results ([0026]).

Therefore, while Naito et al. provide teaching regarding the combined MFR, the examiner submits that it would have been obvious to one having ordinary skill to have selected the MFR of the individual resins that make the blend to arrive at a combined MFR set forth by Naito. One having ordinary skill would have arrived at the required MFR values through predictable and routine experimentation.

Response to Arguments

Applicant's arguments filed November 14, 2007 have been fully considered, but they are not persuasive. Regarding Cernohous, applicant argues that Cernouhous employs resins other than styrenic resins. This argument is not persuasive. In the cited example, Cernouhous is employing a co-extrusion technique where various extruders are utilized. One of the layers is produced by an extruder that is processing PS/HIPS and a compatibilizer. As the compatibilizer can be monomeric and/or a styrenic based polymer, Cernohous still meets claim 1.

Regarding the teaching of Holden, applicant argues that Holden employs polymers in addition to styrenic based polymers and as such can not render the claim obvious. This argument is not persuasive. Holden employs a styrenic based component A and component C, which is disclosed as being a styrenic based block copolymer (col. 7, lines 39-col. 8, lines 7). Holden also employs 2-30 parts of a polyolefin resin to improve the products resistance to fatty materials (col. 8, lines 53-59). The examiner submits that in view of the teaching at col. 8, lines 53-59, it would have been obvious to one having ordinary skill in the art at the time of the claimed invention to excluded the relatively low amount of polyolefin from products that do not require the resistance to fatty materials for the purpose of reducing production costs.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager
Examiner
Art Unit 1791

CHRISTINA JOHNSON
SUPERVISORY PATENT EXAMINER

January 18, 2008